Module 5- Computer Systems (2023-24)

Project

UNIVERSITY OF TWENTE.

Software Testing Document (STD) Template

Team ID: 15	Project Name: Earthquake Detector
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Instructions:

1. Refer to the below table and complete all the sections with clarity.
2. Select those test strategies that are applicable to test your application.
3. Make sure to refer to the "Development-Security by Design Checklist" to see the possible vulnerabilities in your application.
4. Feel free to add features and test cases in the table that are essential to test your application.
5. You can use Selenium, SonarQube, and/or GitLab CI/CD to perform source code review, static and dynamic application testing, etc.

Test Strategy	Date (When did you perform the testing?)	Process/Function (Features to be tested)	Test Case	Step	Description	Status (Passed/Failed /Open)	Expected Results	Actual Result	Mitigation plan/Solutions	Review on the Mitigation plan (Passed/Failed)	Remarks on the Failed mitigation plan
Application Testing	10.11.2023	Authentication	Registering	1	User should be able to register a new accont that gets stored in the database	**Passed**	User gets redirected to the login page				
			Incorrect credentials	2	Either an incorrect username or password shold not allow access to the dashboard	**Passed**	After trying to log in with an incorrect username/password user is redirected back to the login page				
			Logging in with a registered account	3	The correct user ID and password should be entered.	**Passed**	User got redirected to the home page				
	31.11.2023	Pasword change	Changing user password	1	The user is able to change their own password	**Open**	The password is changed.	The password cannot be change since the backend is not implemented yet	i) Change the HTML for the changePassword.html documment to use the <form> tags; ii) Implement the endpoint to change the password in the database.	**Passed**	
	14.11.2023	Session management	Accessing dash URL (not logged in)	1	Protection against users accesing the dashboard page when not intended	**Passed**	User gets redirected to the login page				
			Accessing dash URL (logged in)	2		**Passed**	User gets redirected to the dashboard				
			Logging out	3	The session should be cleared from the cookie assigned during login	**Passed**	User gets redirected to the login page and cannot access the dashboard without logging in again				
			Session timeout	4	After logging and staying inactive for 15 minutes, the session expires	**Passed**	Staying inactive on the dashboard page and then refreshing the page takes the user back to login				

API Testing	27.11.2023	Data visualization	Graphing values	1	The graph visalizes data coming from the backend via a websocket in real-time	**Passed**	When a user loggs in, the server receives "Client connected", and the graph starts drawing values and interpolating between new ones while removing outdated ones				
	31.11.2023		Switching displayed data	2	It is possible to switch the graph between different different incoming values	**Passed**	A user can select the data type via a dropdown menu, and when selected, the graph line changes colour and the appropriate y-axis domain is displayed for the data type				
	31.11.2023	Map	Displaying map in the interface	1	Upon logging in an interactive map (from the Leaflet API) is displayed in the dashboard	**Passed**	The map is properly displayed and bound inside the appropriate container. It is possible to zoom in/out and pan around.				
Hardware Testing	7.10.2023	Accelerometer reading	Get the accelerometer readings	1	Get the accelerometer output	**Passed**	The accelerometer is responsive to the movement	The program accurately outputs the acceleration			
	8.10.2023	GPS reading	Get the live location while the device is outdoor	1	Get the GPS readings output	**Passed**	The GPS can capture the sattelite signal and print out the coordinates	The GPS could capture the signal and prints out coordinates			
			Get the live location while the device is indoor	2	Get the GPS readings output	**Failed**	The GPS can capture the sattelite signal and print out the coordinates	The GPS could not capture the signals.	It is infeasible to get the signal indoors. However, we plan to replace the module with an improved one that might be usable indoors.	**Failed**	The new GPS antenna could not fetch a consistent GPS signal indoors. We concluded that it is infeasible to achieve this with the current hardware and getting new parts is not justifiable at this point since this is not a major component. Instead, we opted to use the IP address of the device to estimate the location.
	7.10.2023	Buzzer	Trigger the buzzer	1	Trigger the buzzer based on acceleration readings	**Passed**	The buzzer produce sound when an earthquake is detected	The buzzer produced sound at a level of acceleration			
	1.11.2023	Battery	Check battery availability	1	Connect the battery module to the Pi	**Passed**	The Pi is able to run on battery for at least 5 hours	The Pi is able to run on battery for at least 5 hours			
	10.10.2023	LCD Display	Display the reading and status	1	Print the readings to the LCD	**Passed**	The LCD correctly displays the readings and is updated frequently, also displays alert in the case of earthquake	The LCD correctly displays the data			

Note: Refer to the following documentation on GitLab and SonarQube for clarity-

1. Source Code review with SonarQube: **https://docs.sonarqube.org/latest/**
2. GitLab integration with SonarQube: **https://docs.sonarqube.org/latest/analysis/gitlab-integration/**
3. SonarQube (Static Application Testing): **https://www.sonarqube.org/features/security/**
4. Gitlab (Static Application Testing): **https://docs.gitlab.com/ee/user/application_security/sast/**
5. GitLab (Dynamic Application Testing): **https://docs.gitlab.com/ee/user/application_security/dast/**

Team members' reviewed: (Hieu Chu, Yes), (Cuong Bui, Yes), (Rudolfs Neija, Yes), (Cenk Dogruer, Yes), (Carlo Britto, Yes)

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